

REMARKS

Claims 1-24 remain pending in the present application. Claims 12, 15-18, and 24 are withdrawn from consideration and Claims 1-11, 13, 14, and 19-23 stand rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

SPECIFICATION

The specification stands objected to for including the word “comprises” in the abstract.

Applicants respectfully disagree with the objection to the abstract, since the word “comprises” is used to indicate what elements make up the heater system. The heater system comprises or includes certain elements as specifically stated in the abstract. According to The American Heritage® Dictionary of the English Language (4th Ed. 2000), “extraneous” is defined as “not constituting a vital element or part”; “inessential or unrelated to the topic or matter at hand”; and “irrelevant.” However, removal of this word “comprises” would render this first sentence incomplete and grammatically incorrect without a proper verb. MPEP §608.01(b) states that the abstract should enable the reader to “determine quickly from a cursory inspection of the nature and gist of the technical disclosure.” Applicants submit that there is nothing “extraneous” about the word “comprises” as used in the abstract as a reader who is familiar with the English language can easily determine the nature and gist of the technical disclosure, as evidenced by the fact that this abstract was read and understood by each of the inventors in the present application.

Furthermore, Applicants conducted a search of abstracts containing the word “comprises” for all issued patents since 1976 and have found that almost four hundred thousand (400,000) patents contain this word and forms thereof in their abstracts. Clearly, the USPTO would not issue so many patents if the use of such a word was “extraneous” and improper under the rules.

However, in the interest of expediting prosecution of the present application, Applicants have amended the abstract herein and thus respectfully request that the outstanding objection be withdrawn.

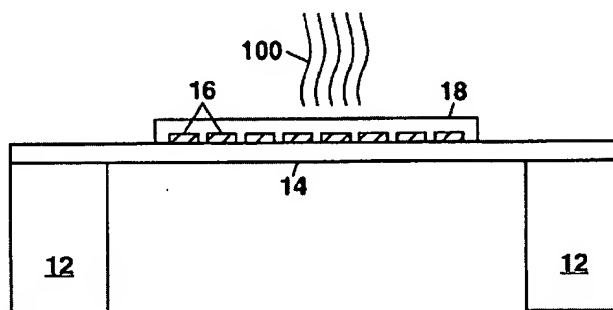
INTERVIEW SUMMARY

As a result of the on-site interview conducted between Applicants’ representative and the Examiner, the claim rejections in the Outstanding Office Action have been overcome. (See attached copy of Interview Summary). During the interview, the Examiner presented new art to the Applicants’ representative, which is addressed herein in accordance with the Interview Summary.

NEW ART

6,171,378 (Manginell et al.): Manginell et al. discloses a chemical preconcentrator that functions to selectively sorb one or more chemical species of interest over a time period, thereby concentrating the chemical species in the sorptive material.

Accordingly, the heating elements 16 are formed directly onto a membrane 14, which is supported by the substrate 12, and the sorptive material 18 is formed onto the heating elements 16.



In operation, the sorptive material 18 acts to sorb and concentrate one or more chemical species of interest from an ambient or a sample vapor 100 over time and can release the chemical species in concentrated form when rapidly heated by the heating elements 16. Therefore, the apparatus of Manginell et al. is a chemical preconcentrator that is used to sorb and release chemicals rather than a heater system that is used to heat a part or device as described and claimed in the pending application. As such, Manginell et al. lacks a substrate that is disposed proximate a part to be heated, in addition to a dielectric layer formed over this substrate onto which the resistive layer is formed. Moreover, although Manginell et al. discloses measuring temperature by monitoring the resistance of the heating element 16, there is a clear absence of any specific teaching or suggestion of a two-wire controller connected to the heating element 16 with only two electrical lead wires. Manginell et al. is silent as to the number of wires and as to the specifics of any controller, not to mention how a controller communicates with the heating element 16.

Accordingly, Independent Claim 6 has been amended to include the additional limitations of a substrate disposed proximate a part to be heated, a dielectric layer, and

two electrical lead wires that connect the two-wire controller to the resistive layer, wherein the claimed heater system provides heat to the part to be heated. Since Manginell et al. discloses a chemical preconcentrator, where there is no part to be heated but rather chemical species to be concentrated, Applicants submit that the claimed heater system is patentable over the Manginell et al. reference. Furthermore, since Manginell et al. is directed to a chemical preconcentrator and lacks many of the elements of the claimed invention, there can be no motivation to combine Manginell et al. with the references previously cited or with those addressed below. For at least these reasons, Applicants submit that amended Claim 6 is now patentable over the cited references and respectfully request that this claim be allowed.

Additionally, Claims 1-5, which recited different types of layered heaters (thick film, thin film, thermal spray, and sol-gel) in independent form, have been cancelled, with prejudice, and new Claim 25 has been added, which depends from Claim 6, to include these different types of layered heaters in dependent form. Therefore, Claims 7-13 and 25 depend from Claim 6 and are patentable over the cited references for at least the reasons stated above in connection with Claim 6. Accordingly, Applicants respectfully request that these claims now be allowed.

Independent method Claim 19 has also been amended in accordance with amended Claim 6, and thus Applicants submit that the claimed method is also patentable over the Manginell et al. reference and any combination of Manginell et al. with the other cited references in the present application. Claims 20-23 depend from Claim 19 and are also patentable over the cited references for at least the reasons

stated above in connection with Claim 19. Accordingly, Applicants respectfully request that these claims now be allowed.

Claim 14 has also been cancelled, with prejudice.

6,198,099 (Kim): Kim discloses a bolometer, which is essentially a device that detects energy based upon a change in the resistance of materials. Although this reference discloses a thin film resistive layer 121 having a relatively high temperature coefficient of resistance (TCR), there is no teaching whatsoever of any kind of heater device. There is no substrate, no part to be heated, nor is there a disclosure or teaching of the elements in the claimed invention, most notably, a resistive layer that is both a heater element and a temperature sensor, and a two-wire controller. Therefore, Applicants submit that the amended claims in the present application are patentable over Kim since Kim is wholly lacking the elements of the claimed heater system and method. Since Kim is directed to a bolometer, and not to a heating device, there can be no motivation to combine this reference with other references directed to heating devices, and thus Applicants respectfully submit that Kim is not germane to the claimed invention. Accordingly, Applicants submit that the amended claims are patentable over Kim for at least these reasons.

20030231415 (Puerto): Puerto discloses a lithography mirror that specifically describes the use of discrete temperature sensors, "Mirror temperature sensor 445" (Page 3, Paragraph [0049]), which can be "at least one infrared detector" or "a thermocouple" (Paragraph [0050]). With its extensive disclosure of discrete

temperature sensors, Puerto cannot teach or suggest using a resistive element as both a heater element and a temperature sensor. Additionally, Applicants submit that Puerto teaches away from the claimed invention with the use of these discrete temperature sensors.

Puerto cites the use of a TCR material “high enough to provide temperature feedback” for the resistive layer in Claims 19 and 43. With the detailed disclosure of discrete temperature sensors throughout Puerto, Applicants submit that the disclosure of a high TCR material is simply providing an improved response time of the resistive layer to temperature variations, not so that the resistive layer is both a heater element and a temperature sensor. Since Puerto is directed to a lithography mirror, the temperature must be controlled such that the temperature “is maintained constant over time.” (Paragraph [0008]). As such, it would be desirable to compensate for any variation in temperature as quickly as possible, thus supporting the use of a TCR material “high enough to provide temperature feedback” for an improved response time.

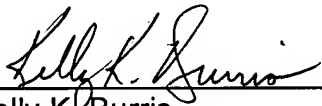
Moreover, there is no support in the specification of Puerto for the use of TCR in Claims 19 and 43, as these claims are the only place where TCR is mentioned. Therefore, there is no specific teaching in Puerto as to how the TCR material is used and one skilled in the art is left to conjecture to determine its application. Additionally, since Puerto is directed to a lithography mirror, there is no substrate disposed proximate a part to be heated. For at least these reasons, Applicants submit that the amended claims are patentable over the Puerto reference and any combination of Puerto with the other cited references in the present application.

CONCLUSION

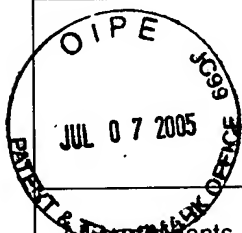
It is believed that all of the stated grounds of objection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding objections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (314) 726-7524.

Respectfully submitted,

Dated: 07 JUL 05

By: 
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Interview Summary

Application No.

10/719,327

Applicant(s)

FENNEWALD ET AL.

Examiner

Leonid M. Fastovsky

Art Unit

3742

All participants (applicant, applicant's representative, PTO personnel):

(1) Leonid M. Fastovsky.

(3) _____.

(2) Kelly Burris.

(4) _____.

Date of Interview: 14 June 2005.

Type: a) ☐ Telephonic b) ☐ Video Conference

c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.

If Yes, brief description: _____.

Claim(s) discussed: 1-11, 13, 14 and 19-23.

Identification of prior art discussed: 617137⁸, 6198099, 20030231415

Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: The applicant arguments have overcome the prior art rejection based on 5505307, however examiner has presented a new art (listed above) and the applicant will consider them in her response.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.


Examiner's signature, if required